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MITES AND LICE ON POULTRY.

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Everyone has seen hens squatting in a hole of dust, vigorously scratching, fluttering their wings and lifting their feathers in an effort to get the dust to the body. This is evidence that the hens are infested with mites or lice, and they are using the means most available to get rid of their tormentors.

Ordinarily the fowls, by this process, are able to keep the parasites in check, and although there is, of course, some loss in flesh and eggs there is no serious damage. But in the case of setting hens the mites and lice increase to an enormous extent, so that the young chick issuing from the egg is at the mercy of hordes of hungry parasites. Some claim that a single individual of these voracious parasites, attacking the throat of a young chick, may cause death. Various troubles are attributed by expert poultry growers to the presence of mites and lice, including bowel disease in summer, drowsiness, refusal to eat, gradual wasting away, loss of feathers, etc. Poultry are frequently supposed to be suffering from some disease when the real cause of their ill health is an excessive abundance of lice or mites.

MITES.

THE CHICKEN MITE.

The mite most commonly found on poultry throughout the United States, and the one called the "chicken mite," is scientifically known as *Dermanyssus gallinæ* Redi. (See fig. 1.) It has long been known to naturalists, and occurs on fowls in Europe and other parts of the world.

DESCRIPTION AND HABITS.

It is an elliptical, somewhat flattened mite, nearly one-twentieth of an inch long, and plainly visible to the naked eye. Often it is of

a pale gray color, with darker spots; but after feeding it usually becomes more or less reddish, according to the amount of blood it has sucked from its host. It has eight rather slender, tapering legs, a pair of shorter feelers, or palpi in front, and between the latter is a pair of needle-like mandibles with which it secures its food.

The adult mother mite lays her tiny eggs in cracks and crevices of the wood, usually where there is some manure or other filth. The mites when born are whitish in color, oval in shape, and have but six legs. They feed largely, if not wholly, upon filth, but when older attack the chickens. If a partly hatched egg is broken in the nest the mites swarm and feed upon it. After the young mites have fed for a few days they molt, or shed their skin, and appear with eight legs, looking more like their parents. Other molts occur before the

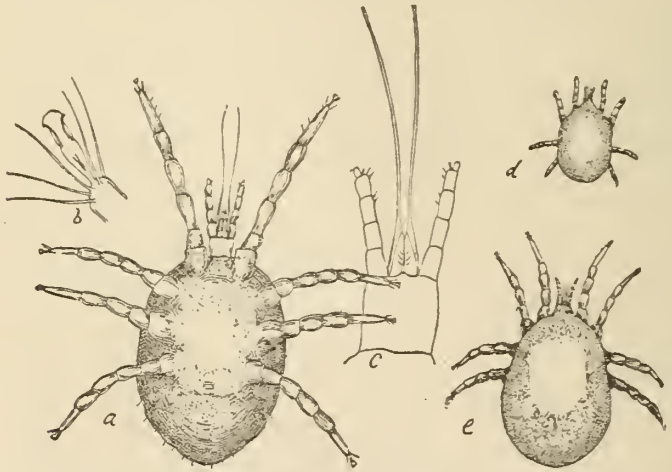

FIG. 1.—The chicken mite (*Dermanyssus gallinæ*): *a*, Adult; *b*, tarsus; *c*, mouth parts; *d* and *e*, young. All much enlarged (from Osborn).

adult condition is reached, the mites becoming mature in about ten days from birth.

Darkness and dampness are favorable to the increase of the pests, and plenty of sunlight and good ventilation will do much to hinder them. The mites do not remain on the poultry all the time, but usually only long enough to feed; they then either wander about in search of another host or retire into crevices. They are most active at night, but when very numerous many can be found crawling about by day. By some means, possibly by the sense of smell, they are able to realize that a hen is near by, and within a few minutes after a hen has settled upon her nest the mites will be found upon her.

The chicken mite will attack other kinds of fowls, horses, and even man. The mite found upon pigeons, however, is now considered to

be a distinct species. Pigeons, therefore, do not spread the chicken mite, as was formerly supposed by many people.

The loss caused by the chicken mite is, of course, variable, according to the amount of infestation. Some writers consider this mite the most serious enemy of poultry, while others think it of secondary rank. In any case, it is a pest of such importance as to warrant the strictest measures of repression.

REMEDIES AND PREVENTIVES.

Cleanliness and sunlight are the best means of preventing an abundance of mites. A chicken house can not be kept too clean. It should be cleaned out every few weeks, at least, and it is a great advantage to have the nests and roosts so built that they can be removed and washed in some cleansing liquid.

A treatment much in favor is that of whitewashing the inside of the house. If this is done, about 4 ounces of crude carbolic acid should be added to each gallon of whitewash. Like all other treatments, this should be repeated in three or four days, to destroy the young which have hatched since the first application.

In cleaning the henhouse it is useful also to scatter a mixture of 3 parts of dry air-slaked lime and 1 part of sulphur. The doors and windows should be closed and the mixture thrown up to the roof till the air is filled with it. It will then settle upon everything, the sulphur killing many mites and the lime aiding in drying the droppings. Setting hens need not be disturbed.

But the best remedy against the "chicken mite" is to spray with kerosene emulsion. To make this, shave one-half pound of hard soap into 1 gallon of soft water and boil the mixture until the soap is dissolved. Then remove it to a safe distance from the fire and stir into it at once, while still hot, 2 gallons of kerosene or coal oil. The result is a thick, creamy emulsion. Dilute this stock mixture with 10 parts of soft water, and apply as a spray or with a brush, being careful to work it into all cracks, crevices, and joints of the building. Two or three applications on the same day are necessary to obtain the best results, and this treatment should be repeated in three or four days to kill the young mites which will have hatched since the first application.

OTHER MITES ON POULTRY.

Although the species mentioned, *Dermanyssus gallinæ* Redi, is by far the most injurious, yet there are several other mites that attack poultry. The "itch mite" of fowls (*Cnemidocoptes mutans* Robin) is the cause of "scaly-leg." It does not, however, confine itself to the

legs, but often occurs on the comb and neck. The adults of this species are very small, whitish in color, and have very short legs. They burrow in the skin, causing an intense itching, and forming a crust of loosened tissue above their burrows. A good remedy is to bathe the infested parts in warm, soapy water, and then apply sulphur ointment. Naphthaline crystals powdered and mixed with 9 parts of lard also make an effective ointment.

Another closely related mite, *Cnemidocoptes gallinæ* Railliet, is sometimes found on hens. It burrows near the base of the feathers; and the itching induces the hen to pluck her feathers in a vain effort to stop the irritation. It is sometimes called the "depluming mite." Another similar mite, *Rivoltasia bifurcata* Rivolta, sometimes feeds on the feathers of fowls, but causes no injury.

In Texas, Arizona, New Mexico, and southern California there is a tick, *Argas miniatus* Koch (see fig. 2), which attacks hens, and in those sections is a more serious menace to poultry even than the "chicken mite." The adult tick is a flattened, elliptical, reddish, or mahogany-brown creature, about one-third of an inch long. The edges of the body are quite sharp, and from above one can scarcely see the small and slender legs. The surface of the body is finely and irregularly roughened or pitted. These ticks feed on the hens at night and retire to the crevices of the henhouse during the day. The eggs are laid in these crevices, and both ticks and eggs can be destroyed by spraying the inside of the house with kerosene. It is useful to rest the ends of the roosts upon something which the ticks can not cross, as a ball of tarred cotton, or the roosts may be hung by wires from above. The life history of this tick is not fully understood as yet, but there is no probability that it will spread to the North.

FIG. 2.—*Argas miniatus*, a tick which infests poultry. Greatly enlarged (original).

LICE.

The various species of lice affecting poultry are more numerous than the mites, but since they do not suck the blood they are less injurious.

THE COMMON HEN LOUSE.

DESCRIPTION AND HABITS.

The only species found in abundance throughout the country is known as *Menopon pallidum* Nitzsch (see fig. 3), the common "hen

louse." This is pale dull yellow in color, with more or less distinct darker marks on each side of the body, although often after feeding it is reddish or pinkish in color. The length is about one-twentieth of an inch, the legs are six in number, and the head is broad, rounded in front, with a small antenna or feeler on each side. It is always without wings.

This louse is very active, and seems to wander continually over the skin or among the feathers, apparently looking for something new, as any person will discover who handles a lousy hen. The eggs, or "nits," of this louse are tiny, elongate, oval objects, with the smaller end flattened and the larger end attached to the vanes and barbs of the feathers. If conditions are favorable, the young issue from the egg in about eight days, but they may be kept in a cool place for several months without loss of vitality. The young louse is much like the parent, having six legs and a broad head, but with a rather smaller body. It keeps close to the body of the host, molts several times, and in the course of two or three weeks, if not disturbed, will reach maturity. Lice are not provided with mandibles fitted to suck blood from a hen, but they use their short-toothed jaws to bite off the epidermal scales, or dandruff, and the edges of the feathers. The claws of the feet are sometimes very sharp, and continual pricking of the host draws blood, which is greedily eaten by the lice. This accounts for the reddish color of many specimens.

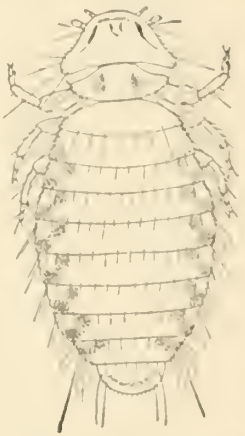

FIG. 3.—The common hen louse (*Menopon pallidum*). Greatly enlarged (original).

Dampness, filth, and warm weather favor the increase of these lice, and a setting hen in a foul nest is their paradise. At night they crawl about on the roosts, going from one fowl to another, so that one infested bird will soon cause the infestation of an entire flock.

The chickens do not suffer from loss of blood, but from the nervous exhaustion induced by the biting of their scales and the scratching and pricking from the claws, often resulting in sores or ulcerations. The continual worry and loss of sleep produce debility and bowel troubles. Little chickens are, of course, more susceptible and often die from the attacks.

Unlike mites, lice are usually confined to one kind of host, and the lice on ducks, geese, and pigeons are of kinds different from those on chickens.

REMEDIES.

Many people who keep a few hens consider the infestation by lice a natural state of affairs, and so long as the lice are not so excessively numerous as to interfere seriously in egg production no attempts are made to exterminate them. Lice, however, are readily killed by a number of substances, although there is more or less difficulty in getting at them. Hidden among the feathers or close against the body the parasites are secure against any remedy unless it be applied very thoroughly. Moreover, one application is not enough. What will kill the lice may not affect the eggs or "nits," so it is necessary to repeat within a few days any method of treatment that may be used.

Carbolic acid, tobacco, sulphur, naphthaline, or any oily substance will kill the lice if it touches them.

Carbolic acid must be handled with great care, for it is a burning poison. It is used mixed with lime or kerosene. To make the lime mixture, stir 2 ounces of 90 per cent carbolic acid in 1 pint of cold water, sprinkle it in a half bushel of lime, and leave the lime to air slake. This can be sprinkled anywhere about the henhouse, but is most effective if put in the nests and mixed with the dust in the "wallow." If kerosene is used, take 2 ounces of carbolic acid to 1 gallon of kerosene, stir it thoroughly, and paint the mixture upon the roosts and nests, keeping the poultry out of the house until the mixture is dry.

Tobacco is used as an infusion, made by pouring hot water on tobacco stems. The hens are dipped into the liquid thus made. This is not a pleasant method to practice, and care should be taken to prevent the fowls from taking cold. Tobacco dust is the basis of various powders which are advertised to be used against lice. Their value depends largely upon the strength and freshness of the components. They are often used successfully, although frequently they are expensive.

Sulphur mixed with air-slaked lime, 10 pounds of sulphur to a half bushel of lime, is also often used against lice. This may be scattered everywhere in the house, or mixed in the dust wallow. Sulphur can also be used in fumigation. To avoid danger from fire, the sulphur or sulphur candle should be put on an old tin can or something similar, and this placed in the middle of a pan of wet ashes or earth. Light the candle and shut the house tightly for several hours; then air it well before allowing the hens to enter.

Kerosene may be used in conjunction with naphthaline. Dissolve in kerosene all the flake naphthaline it will take, and paint the roosts and nests with this saturated solution every week or so for a few months. Sawdust wet with this liquid may be placed in the

nest, but should be put beneath the straw, so that the eggs will not rest upon it. Naphthaline is not poisonous, however, and may be handled without danger.

OTHER LICE ON POULTRY.

Chickens are subject to the attacks of various other lice with habits similar to those of the species mentioned, but most of them are not common. One, *Menopon biseriatum* Piaget, is very like the common "hen louse," but larger, and with a more elongate body. Others belong to the genera Lipeurus (fig. 4), Goniodes (fig. 5), and Goniocotes (fig. 6). Several of these are known as "gray sucker lice." They do not move around as much as the Menopons and are often confined to one part of the body. Sometimes they bury their heads in the scales of the skin or close to the base of a feather and remain a long time in one position. The species of Lipeurus are more slender than the common lice, and the Goniodes and Goniocotes are broader, with more prominent feelers or antennæ, and with darker spots on the borders of the body. The remedies used against the common hen louse will at the same time destroy any of these other lice that happen to be present.

FIG. 4.—*Lipeurus* [illegible], a louse that infests poultry. Much enlarged (after Denny).

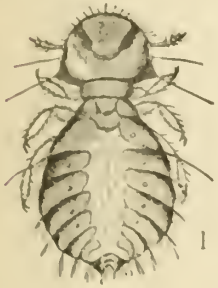

FIG. 5.—*Goniodes dissimilis*, a louse that infests poultry. Much enlarged (after Denny).

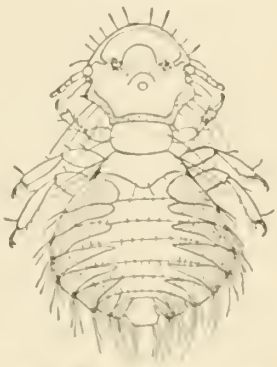

FIG. 6.—*Goniocotes abdominalis*, a louse that infests poultry. Much enlarged (original).

A SURE PREVENTIVE FOR MITES AND LICE.

Since lice and mites have no wings and can crawl but short distances, it is evident that they are disseminated only from fowl to fowl. But if an infested hen or rooster is brought to the flock the parasites soon spread to all the birds. There is a possibility that lice may be carried by certain bird flies, but such flies have been found so rarely on poultry that this-

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method of infestation need not be considered. It is therefore a sure preventive against mites and lice to keep only poultry hatched in an incubator and raised in a brooder. Build the hen house on a spot where none has been before; never buy fowls, raise them artificially; keep them away from other hens, and they will not be troubled by mites and lice.

Approved:

JAMES WILSON,
Secretary of Agriculture.

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